

Regulatory Reform in Telecommunication Services: The Korean Experience

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1. Introduction

During the last two decades, Korea has transformed the telecom industry into the engine of growth for the knowledge-based economy. Teledensity has grown from 7.2% in 1980 to over 48%. Mobile service subscriptions have quadrupled over last 5 years to more than 30 million, leading the mobile market in Korea to become the 8th largest in the world. Sixty-seven percent of all Korean households, or over 9.6 million families, have access to high-speed Internet services. Korea is the 10th country to develop digital switch exchange, and the first to commercialise 2G and 3G CDMA technologies. Korea is also a major supplier of CDMA handsets in the world (53% in 2001) and leads the construction of the CDMA belt. The OECD and ITU have officially commended Korea's effort for its successful broadband rollout. These accomplishments and the significant role of the Korean government as well as strong policy initiatives have drawn the attention from the world.

Key factors of regulatory reforms differ according to the policy objectives of each country. There is no one country that can be held up as a successful model of regulatory reform. Nevertheless, the main regulatory functions assigned to and performed by regulatory authorities are generally similar throughout the world. Most countries have gone through similar development stages where relevant regulatory reforms are recognised as leading to improvements in social welfare by attaining lower service tariff, higher service quality and greater efficiency in the market.

This paper analyses regulatory reforms that contributed to the growth of telecom service industry during the last two decades in Korea. First, I characterise the regulatory reforms that Korea has taken and then illuminate various challenges the country has had to overcome on the way. In addition, I discuss a few lessons from the Korea's experience that may provide valuable implications to other economies under similar circumstances.

2. Characteristics of the Regulatory Framework

2.1. Textbook Approach

First of all, it is fair to say that Korea's regulatory framework followed the textbook method in adhering to the global standards of privatising, liberalising and deregulating/re-regulating the telecom industry.

In 1981, Korean government, by creating Korea Telecommunications Authority (now KT), separated its role as a service provider from its policymaking role as the first step to raise the efficiency in the provision of basic telephone services. KTA, under government leadership, carried out its first task of establishing a nation-wide telecommunication network and relieved the stagnation from growing telephone demand.

As the demand for basic telephone service was met and new types of services and technologies became available, the government introduced competition into the market since the monopolistic conditions were far less likely to provide efficient, innovative and inexpensive services to the public. In 1990, the value-added services market was opened for competition, followed by the basic voice telephony market, the international services market in 1992, the long-distance services market in 1995 and finally the local market in 1997. As a result, there were no longer any legal impediments for market entry of the provision of fixed telecommunication infrastructure and services. As of today, there are 32 facilities-based telecom service providers (FSPs) that compete fiercely in this competitive market structure.

Furthermore, Korea has taken further steps to open the telecom markets. The multilateral and bilateral negotiation process resulting in the 1997 WTO Basic Telecommunication Agreement has accelerated market opening. And as a direct result of the agreement, Korea has opened the resale market to foreign companies and raised the limits of foreign ownership to a ceiling of 49% for domestic FSPs

After the introduction of competition in the market, Korea has introduced new regulatory measures such as carrier pre-selection, new interconnection rules, has restructured the licensing framework for entry into the fixed public telecommunications and value-added service markets, and has changed price regulation. These changes have had a positive impact on the opening of the market to competition, the introduction of new services and in price competition. At the same time, Korea also has placed continuous efforts in privatising the telecom sector. The government began the process of privatising Korea Mobile Telecom (KMT) in 1994, and sold off all government shares to complete the privatisation process of KT on May 2002. Privatisation is expected eliminate the conflict between ownership objectives and enforcement of impartial regulations resulting in non-discriminatory decisions.

2.2. *Consumer Protection*

While consumer interests are best enhanced through effective competition, which will lead to lower prices, improved choices and better quality, there is a continuing role for the government to ensure that consumer interests are protected. Korea has pursued the implementation of the best practices in terms of handling consumer complaints and providing universal services while the Telecommunications Business Act has laid down provisions for failing to remedy problems by service providers. Consumers may claim compensation from operators in a number of areas specified in the Consumer Protection Act, including double billing, property damage from telecommunication facility installations, and overpayment due to operator errors. For this purpose, the Korea Communication Commission (KCC) maintains a Consumer Complaints Center. However, complaints are not limited to consumers. The industry also has means to seek redress for complaints concerning unfair practices of other carriers, and consumer claims for indemnity. Currently, with 9.6 million households subscribed to broadband services, the government is evaluating a plan to include it as a universal service in order to reduce the digital divide.

2.3. *Facility-based Competition*

Market entry was generally executed through one of three methods, facility-based competition, unbundling of network elements, and resale. Every economy saw that the promotion of competition both in services and in the provision of alternative infrastructure were necessary to maximise the effect of competition. However, during the transitional phase, it was hard to achieve both due to the network externality, natural monopolistic character of the industry. In some cases, the government had to call priority between service competition and infrastructure build out since mandatory resale of networks hindered the incentive for further network build out.

When Korea faced those choices, Korea took the route of the facility-based competition method. Korea issued three facility-based operator licenses for PCS, which resulted in the fast rollout of wireless network and services. At the time, broadband services were classified as enhanced service, which allowed FSPs to provide high-speed Internet services without further license or approval. Also, the government provided public loans at the prime rate to FSPs in order to facilitate the roll out of the market by reducing the financial burden of investing into access networks.

Similarly, local loop unbundling (LLU) and wireless resale were introduced later than other OECD economies. It was only after witnessing the effective network competition that Korea decided to introduce LLU and to this day, Korea still does not mandate wireless network operators to wholesale their airtime.

2.4. *Virtuous Cycle*

Korea's distinctive feature of regulatory reform in the telecommunications sector is its policy of complementing manufacturing sector with service sector, and vice versa. This policy objective was based on the firm belief that creating a virtuous cycle between vendor and operator would sustain competitiveness in an innovative industry. The government has urged for and has co-ordinated strong efforts in basic R&D and applications. For example, the development of digital switch exchange was challenging, but in retrospect, it was a valiant decision for its far-reaching influence on the future advancement of IT. Also, as a strategic but uncertain choice, the development of advanced CDMA technology has become the industry standard and has made Korea into the leading nation in CDMA technology.

With the value chain changing from network to contents due to broadband and 3G, Korea hopes to provide a competitive environment in which contents, network, and manufacturing industries can grow together and complement each other. As a result, Korea has announced various safeguards such as opening network to protect small content providers from large network operators and vendors.

3. *Responding to the Challenges*

3.1. *Addressing Market Power*

The results of regulation for the traditional telecom market are mixed. Contrary to the success in long distance and international markets, network competition in the local access markets has turned out to be ineffective. KT still remains dominant, whereas SK Telecom has increased its market power in the mobile sector through M&A. In Korea, an incumbent's market dominance seemed inevitable due to the establishment of essential facilities, network externality, lock-in effect, and economies of scale. However, the existence of dominant market players requires regulatory attention to maintain a healthy competitive market environment.

In response, Korea has laid out a plan to implement an interconnection pricing framework using average long-run incremental cost from 2004. Taking OECD's recommendations, Korea enacted a new obligation in December 2000 that outstanding telecom service providers should provide their unbundled elements to their competitors. Furthermore, the Korean government has finalised details of the obligation and a relevant pricing scheme in December 2001, so that unbundling obligations are now effective *de jure* and *de facto* in the Korean marketplace. Korea also addressed the plan for introducing number portability in fixed line services in the year 2003 and in wireless services when 3G services is expected to roll out.

3.2. *Designing Incentive Regulations*

Deregulation involves some transaction costs that would not be incurred in a fully competitive market or in a monopoly environment. Generally, deregulation measures have the tendency to regulate the incumbent more in the interest of greater competition. However, unnecessary regulations will cause market inefficiency and lay burden on investment incentives. Thus, the government's role is gaining greater importance for maintaining effective competition, while boosting investment incentives for dominant players and lowering market inefficiencies.

To accommodate those needs, the government eliminated government intervention on KT's decisions regarding their business plans, company direction and procurement by enacting the Privatisation Act in 1997 and announced its plan of implementing a price cap in the local telephony market in 2001.

3.3. *Conflict of Interest among Players*

As the telecommunication services market became matured and competitive, operators demanded that R&D contribution that subsidised the R&D in manufacturing be reduced. IT industry has brought its share of burdens to telecom operators including large entry barriers into the market in the form of contribution fees. As a result, the Korean government has abolished the initial payment system that is being imposed to fixed line operators and will improve the annual contribution fee payment system in order to ensure fairness among operators.

Also, the dual policy for industry promotion and regulation often caused conflicts of interest. The OECD made the recommendations to Korea of separating functions and transferring the regulatory functions over to KCC. Korea took necessary measures for strengthening KCC's role, function and independence. KCC then became in charge of inspecting and reviewing activities on local loop unbundling, number portability and carrier pre-selection under the revised Telecommunication Business Act. The members including the chairman were appointed or commissioned by the President to carry out its duty independently and at its own discretion. Even though KCC is not a separate body from MIC (Ministry of Information and Communication), its role and function is independent.

3.4. *Digitisation & Convergence*

Digitisation brought a wide array of distinctive products, creative bundling and convergence between telecommunications and broadcasting. Innovative ideas of individual service providers created greater economic value, shifting the source of economic value from network to contents and applications. This paradigm shift in the telecom value chain and in convergence raised a few concerns to regulators.

First, the government needed to provide a regulatory guideline for providing new services. New and converged services were hard to classify, which caused conflicts between regulating bodies and conflicts between operators.

Second, the government had to design safeguards to maintain a competitive environment for contents and application service providers. As the cost of network expansion and upgrading increased, there was pressure for leading infrastructure providers to diversify into new application areas. This private sector initiative has shown a tendency towards vertical integration among key players in different sectors participating in the development of information infrastructures and multimedia.

To respond to those challenges, MIC has made a consistent effort in classifying new services based on the Telecommunications Business Act. Further, the Korean government has also addressed new plans on changing the classification system to encompass the new telecommunications environment.

To boost the converged service while maintaining a competitive environment, Korea has implemented reforms in horizontal and vertical integration allowing free entry but regulating the anti-competitive behaviour of dominant players.

4. Lessons

From the Korea's regulatory reforms mentioned above, a few lessons can be drawn. First, the faithful adoption of the textbook approach resulted in changing monopoly conditions into competition in every sector and provided the incentives for firms to be innovative and value creating. These structural reforms were the main driver to the rapid development of the telecommunications infrastructure and provided benefits to consumers such as low tariff, and universal services. Moreover, Korea's textbook approach signalled to the market where the regulatory reform would go, which avoided cost, confusion and delayed benefits.

Second, Korea's success in broadband implies how important facility-based competition is in boosting the investment incentives at an early stage for new services. While some economies pursued service-based competition once the market is liberalised, Korea followed another path by opening up the market to facility-based competition. The natural monopolistic structure of the network market acts as a strong barrier against effective competition for the various economies wanting to introduce the competition in the network. In addition, the usage of economies of scale and the prevalence of network externalities resulted in the pre-emption of the market. This circumstance tends to force regulators to settle for network sharing in local access market.

However, the effectiveness of such a regulatory framework is limited in its magnitude and in its longevity. In the absence of the facility-based competition, the vertical structure allows the monopoly network operators to extract a downstream rent. There may be some criticism against the social cost of multiple network construction, but the potential value of the downstream sector far exceeds the social costs when effective network competition boosts the successful service competition. Also, facility-based network competition, not network sharing regulations, helps achieve the socially optimal level of investment because it allows the operators to internalise the return on the network investment.

Third, the design of concrete competitive safeguards for all contingencies is important. Even though Korea did an excellent job for establishing a new legal framework, Korea lacked the essential regulatory safeguards, which were necessary to achieve effective competition. Korea also lacks local competition and the penetration ratio of incumbents are higher compared to other OECD economies that implemented LLU, wireless resale, and interconnection charges based on long run incremental cost. Following OECD's recommendations, Korea has quickly implemented the necessary safeguards and expects to see results in near future.

Fourth, as the markets are converged through at the technological, service and enterprise levels, it will be necessary to change the regulatory framework to accommodate the new changes. Convergence is a very complex issue and an inalienable building block to the information society that we all visualise. The diffusion of these new information infrastructures, the development of new services and the creation of new job opportunities, will depend crucially on regulatory reforms.

Korea has taken reasonable measures to promote converged services by allowing CATV to offer broadband services. KT and SKT could take shares in the broadcasting services market. In addition, MIC has continually made efforts in interpreting new types of converged services in order to enhance social welfare. Current debates over regulating converged services among regulators have received positive reactions in accommodating the paradigm shift.

Finally, since there is no cure-all policy and regulatory framework for all economic environments, it becomes important to share ideas with the rest of the world. Korea has endeavoured to develop and implement relevant policies to facilitate the growth of the telecommunications sector. In particular, Korea has implemented the commitments that were made in the context of the WTO's agreement on basic telecommunications earlier than scheduled, and has reduced the foreign ownership restriction in FSPs and KT. Additionally, Korea has also accommodated OECD recommendations suggested on regulatory reform.

5. Conclusion

During the last two decades, Korea has implemented a series of essential regulatory reforms that has changed the telecom market environment into a pro-competitive one, contributing to the tremendous growth in the telecom sector. In addition, Korea's further reforms based on economic principles against anti-competitive behaviour will enhance effective competition and will provide substantial benefits to consumers and end users. Continued regulatory reforms will be required in the future with the constant changes in the telecom environment resulting in the emergence of new and complex issues that will need to be resolved.